REMARKS

Applicant amended independent claim 1 to clarify that the first and second sessions are established by the source and destination computer systems, respectively (similar features were recited in independent claim 26) and to clarify that each of these sessions are bi-directional barrier traversal sessions. Support for these clarification is provided throughout the application, including, for example, at page 4, lines 20, to page 5, line 16, and at page 8, lines 10-22. Applicant similarly amended independent claims 11 and 26.

The examiner rejected of claims 1-3, 7-19, 32 and 36 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,754,707 to Richards et al., in view of U.S. Patent No. 6,421,732 to Alkhatib et al., in view of U.S. Patent No. 5,564,070 to Want et al., and in view of U.S. Patent No. 5,999,979 to Vellanki.

In addition, the examiner rejected claims 33 and 39 under 35 U.S.C. §103(a) as being unpatentable over Richards, in view of Alkhatib, in view of Want, in view of Vellanki and further in view of U.S. Patent No. 6,185,606 to Bereiter.

The examiner also rejected claims 26 and 38 under 35 U.S.C. §103(a) as being unpatentable over Richards, in view of Want and further in view of Vellanki, rejected claims 27-28 and 40 under 35 U.S.C. §103(a) as being unpatentable over Richards, in view of Want, in view of Vellanki, and further in view of Bereiter.

The examiner also rejected claims 29-30 under 35 U.S.C. §103(a) as being unpatentable over Richards, in view of Want, in view of Vellanki and further in view of Alkhatib.

Applicant's amended claim 1 recites "establishing, by the source computer system, a first bi-directional barrier traversal session between the source computer system and a forwarder/relay service, ...; establishing, by the destination computer system, a second bi-directional barrier traversal session between the destination computer system and the forwarder/relay service, ..." Thus, claim 1 includes establishing the virtual connection between the source and destination computer systems, via the forward/relay service, includes each of the computers establishing a bi-directional barrier traversal session with the forward/relay service.

In contrast, no combination of the cited references describes the features of "establishing, by the source computer system, a first bi-directional barrier traversal session between the source computer system and a forwarder/relay service, ...; establishing, by the destination computer system, a second bi-directional barrier traversal session between the destination computer system and the forwarder/relay service".

Richards describes a secure computer system that includes a central computer (referred to as a "nexus") that facilitates communication between two or more client software programs across wide area networks, including the Internet, where they would normally not be able to communicate with each other (col. 4, lines 55-62). To enable communication between two such client programs, Richards uses communication links called upspouts and downspouts. Richards explains:

> **To communicate with the client 130, the client 120 sends an upspout 126 through its send communication module 124. The information relayed through the upspout 126 is handled by the nexus incoming communications module 114. The incoming communication module 114 in turn relays the message transmitted by the client 120 through the downspout 128. (FIG. 1, and col. 5, lines 24-30)**

Richards also explains:

> **The nexus facilitates communications between two or more client software programs across the Internet where they would normally not be able to communicate with each other. The user computer may reside at independent locations on the Internet, behind firewalls, proxy servers, and/or with private Internet addresses. The nexus allows the provider to communicate with the user computer by acting as a central junction, where communications are sent and relayed to the appropriate client program. The provider computer can send the "through" communications on a separate, one time connection, to the nexus, targeted towards the user computer. The nexus receives "through" communications, determines the appropriate destination client, and forwards the communication on the destination client's registered downspout. If a client needs to send a response back to the originating client, a new "through" communications is created, targeted towards the originating client. (Emphasis added, col. 7, lines 49-65)**

Thus, Richards' intermediate service (i.e., the nexus) establishes one-time unidirectional links. In contrast, applicant's claim 1 employ bi-directional communication links between the

client computers. Furthermore, Richard's nexus, unlike applicant's independent claim 1 establishes at least some of the upspout/downspout links between itself and the client computers connected to it.

Richards' fails to disclose or suggest at least the features of "establishing, by the source computer system, a first bi-directional barrier traversal session between the source computer system and a forwarder/relay service, ...; establishing, by the destination computer system, a second bi-directional barrier traversal session between the destination computer system and the forwarder/relay service," as required by claim 1.

Alkhatib describes an IPNet Gateway that maps multiple servers on a private IP network to a single IP address on the Internet. Alkhatib, however, neither describes nor suggests using an intermediary system, such as a forwarder/relay service. Alkhatib also does not describe establishing a communication link between a computer and such an intermediary system, nor does Alkhatib describe establishing a barrier traversal communication link where a connectivity barrier (e.g., a firewall) exists between the computer and the intermediary system.

Therefore, Alkhatib neither discloses nor suggests at least the features of "establishing, by the source computer system, a first bi-directional barrier traversal session between the source computer system and a forwarder/relay service, ...; establishing, by the destination computer system, a second bi-directional barrier traversal session between the destination computer system and the forwarder/relay service," as required by claim 1.

Want describes a system for maintaining processing continuity in a network having a network accessible application and an intermittently connected wireless system (Abstract). Particularly, as shown in FIG. 3, and as described in col. 4, line 63 to col. 5, line 10:

> **Each mobile computer in the workplace environment is assigned at least one agent. The agent operates primarily for the benefit of its assigned computer. For example, agents are responsible for "knowing" the location of their assigned computers. All communications routed to and from a mobile computer goes through its agent. As the mobile computers in the present invention run applications on remote hosts, all communications between the mobile computer and its applications are mediated by its agent.**
>
> **In addition, agents are responsible for security for mobile computers. Any application requesting communication with the mobile unit must be authorized by the agent. Once communication between a mobile unit and**

> **an application is started, other applications wait until they are scheduled to start communications.**

Want, however, fails to describe that each of the mobile computer and/or the applications on remote hosts establishes bi-directional barrier traversal communications with the agent. Accordingly, Want also fails to disclose or suggest at least the features of "establishing, by the source computer system, a first bi-directional barrier traversal session between the source computer system and a forwarder/relay service, ...; establishing, by the destination computer system, a second bi-directional barrier traversal session between the destination computer system and the forwarder/relay service," as required by claim 1.

Vellanki describes improved methods and apparatus for permitting a client computer in a client-server architecture computer network to automatically detect the most advantageous protocol among the protocols available (col. 1, line 66 to col. 2, line 5). Vellanki does not describe a source and destination computers that each establish bi-directional barrier traversal sessions with an intermediate service (e.g., a proxy server, or claim 1's forward/relay service). Accordingly, Vellanki fails to disclose or suggest at least the features of "establishing, by the source computer system, a first bi-directional barrier traversal session between the source computer system and a forwarder/relay service, ...; establishing, by the destination computer system, a second bi-directional barrier traversal session between the destination computer system and the forwarder/relay service," as required by claim 1.

Because none of the references cited by the examiner discloses or suggests, alone or in combination, at least "establishing, by the source computer system, a first bi-directional barrier traversal session between the source computer system and a forwarder/relay service, ...; establishing, by the destination computer system, a second bi-directional barrier traversal session between the destination computer system and the forwarder/relay service," applicant's independent claim 1 and the claims depending from it are therefore patentable over the cited art.

Additionally, the examiner stated, with respect to claim 1, that:

> Richards et al is silent about representing data of a first application in a formal associated with a proxy network protocol configured to communicate data corresponding lo another application. However, Vellanki et al in an analogous art discloses selecting the most

> advantageous protocol for communication by a client computer (see column 3-4, summary of the invention) including representing data of a first application in a formal associated with a proxy network protocol configured to communicate data corresponding to another application so that the data of the first application is communicated through the first connectivity barrier using the proxy network protocol" (see column 10, lines 44-54 and column 13, lines 4-17). Vellanki et al discloses data of the browser (first application) are represented in an HTTP formal such as HTTP that is configured to communicate data corresponding to another application (such as proxy application or server application) so that the data of the client application is communicated through the first connectivity barrier using the proxy network protocol as interpreted by the Examiner. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Richards et al to "representing data of a first application in a format associated with a proxy network protocol that is configured lo communicate data corresponding to another application so that the data of the first application is communicated through the first connectivity barrier using the proxy network protocol as taught by Vellanki et al because it would allow selection of the most advantageous protocol lo be used based on predefined protocol priority (see column 4, lines 33-38). One of ordinary skill in the art would have recognized some of the advantages as suggested by Vellanki et al so that the most advantageous protocol can be selected to traverse the firewall (see column 3, lines 19-40 and 56-60). (Final Action, pages 4-5)

Applicant disagrees with the examiner's contentions. As explained above, Richards describes a secure computer system that includes a central computer (i.e., the nexus) that facilitates communication between two or more client software programs across wide area networks. Specifically, Richard's system uses downspouts and upspouts to facilitate communication between the two client programs. Richards explains:

> **FIGS. 6A and 6B illustrate various communications data formats used by the nexus 110 and the clients 120 and 130. FIG. 6A shows a block 400 having a block type field 410, a block size field 412 and a data field 414. FIG. 6B shows a start block 420 that provides data on the number of blocks 422. The start block 420 is followed by command block 424 that carries one or more command messages 426. The command block 424 in turn is followed by a file block 428 that contains one or more files 430. Next, a session block 432 contains a source address, a destination address and a nexus address 434. The session block 432 in turn can be followed by other blocks 436 that carry block data 438, for instance. These blocks may be unordered or ordered. (Richards' col. 6, line 66, to col. 7, line 11).**

Thus, Richards uses a very specific methodology and data formats to implement its system to facilitate communication between two client programs/devices.

In contrast, Vellanki, as explained above, describes a method for automatically detecting the most advantageous protocol for communication by a client computer. The method includes sending from the client computer to the server computer a plurality of data requests, where each of the data requests employs a different protocol and a different connection. The data requests are configured to solicit, responsive to the data requests, a set of responses from the server computer. Each of the responses employs a protocol associated with the data requests that were sent (col. 3, line 65 to col. 4, line 8). The different protocols from which the most advantageous protocol may be selected include, for example, UDP, TCP, HTTP proxy, HTTP 80, and HTTP 8080 (col. 6, lines 1-13).

Thus, because Richards implements specific communication methodology using unidirectional upspouts and downspout links that transfer data formatted in a specific manner that is entirely different from any of the protocols and data formats available for selection by Vellanki's system, there would be no reason for a person of ordinary skill to combine Vellanki's teachings regarding the representation of data with Richards' teachings regarding the communication methodology used to have two client programs/devices communicate. Indeed, applicant contends that to combine Vellanki's teaching with Richards would render Richards entirely unsatisfactory for its intended purposes and/or change its principle of operation .

Therefore, no *prima facie* case of obviousness with respect to claim 1 has been established, and for this reason too applicant contends that claim 1 and the claims depending from it are patentable over the cited art.

Independent claim 11 recites "establishing a bi-directional barrier traversal session, by the source computer system, between the source computer system located behind a first connectivity barrier and a forwarder/relay service, ...; establishing, by the destination computer system, a bi-directional barrier traversal transport level communications connection between the forwarder/relay service and the destination computer system, the destination computer system located behind a second connectivity barrier". For reasons similar to those provided with respect

to independent claim 1, independent claim 11 and the claims depending from it are patentable over the cited art.

Independent claim 26, which the examiner rejected under 35 U.S.C. §103(a) as being unpatentable over Richards, in view of Want and further in view of Vellanki, recites "assign a server to handle a first bi-directional barrier traversal session, initiated by the first computer system, between the first computer system and a forwarder/relay service, ...; establish a bi-directional barrier traversal session initiated by the second computer system if the second computer system is located behind a second connectivity barrier". For reason similar to those provided with respect to independent claim 1, independent claim 26 and the claims depending from it are patentable over the cited art.

It is believed that all the rejections and/or objections raised by the examiner have been addressed.

In view of the foregoing, applicant respectfully submits that the application is in condition for allowance and such action is respectfully requested at the examiner's earliest convenience.

All of the dependent claims are patentable for at least the reasons for which the claims on which they depend are patentable.

Canceled claims, if any, have been canceled without prejudice or disclaimer.

Any circumstance in which the applicant has (a) addressed certain comments of the examiner does not mean that the applicant concedes other comments of the examiner, (b) made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims, or (c) amended or canceled a claim does not mean that the applicant concedes any of the examiner's positions with respect to that claim or other claims.

Enclosed is a Request for Continued Examination and a Petition for Two Month Extension of Time. The fees in the amount of $810 and $460 are being paid concurrently on the Electronic Filing System (EFS) by way of Deposit Account authorization.

Please apply any other required fees to deposit account 06-1050, referencing the attorney docket number shown above.

Respectfully submitted,

Date: Oct. 31, 2007

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